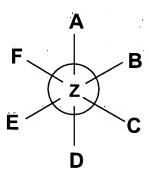
Abstract

The invention provides reporter compounds based on squaric, croconic, and/or rhodizonic acid, among others, reactive intermediates used to synthesize the reporter compounds, and methods of synthesizing and using the reporter compounds, among others.

The reporter compounds relate generally to the following structure:



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Here, Z is a four, five, or six-member aromatic ring, and A, B, C, D, E, and F are substituents of Z, where F is absent when Z is a five-member ring, and where E and F are absent when Z is a four-member ring.

A, B, C, D, E, and F are selected from a variety of elements and groups, including but not necessarily limited to O, S, Se, Te, $C(R^a)(R^b)$, N-R^c, $N(R^d)(R^e)$, W¹, and W².

$$X^2$$
 X^4
 X^4

and

 $\dot{W}^{\dot{2}}$

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$$X^2$$
 X^3
 X^4
 X^4